2008 Annual Drinking Water Quality Report for Kunsan Air Base

This is the Consumer Confidence Report for Kunsan AFB for 2008. This Drinking Water Quality Report indicates that our drinking water meets all U.S. Environmental Protection Agency (EPA) and Air Force regulations. In 2008 Kunsan's potable water was tested for over 70 contaminants. Only contaminants detected in 2008 by sensitive lab instruments are reported in this Consumer Confidence report. Contaminants not listed were not detected. This report shows, contaminants detected in trace amounts were all below EPA and Air Force standards. Bottom line: Our drinking water is very safe!

This report informs you about the water quality and services delivered to you every day. USAF's goal is to provide you with a safe and dependable supply of drinking water. We are committed to ensuring the quality of your water. Sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves and acquires minerals and, in some cases, can pick up substances resulting from the presence of animals or from human activity. Kunsan Air Base performs treatment on water originating from the Okku reservoir approximately two miles off base.

Contaminants present in source water may include: Microbial contaminants such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; Inorganic contaminants such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial and domestic wastewater discharges, oil and gas production, mining and farming; Pesticides and herbicides which may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses; Organic chemical contaminants including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and can also come from gas stations, urban stormwater runoff, and septic systems; Radioactive contaminants which can be naturally occurring or the result of oil and gas production and mining activities.

Earthtech Inc., contracted by the Air Force Center for Environmental Excellence completed a source water vulnerability assessment for the Okku reservoir and city of Gunsan water system in January of 2005. This assessment summarizes the potential for contamination of our source of drinking water and was used as the basis for developing the Wolf Pack's source water protection plan.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791 or by visiting their website at http://www.epa.gov/ebtpages/watedrinkingwater.html.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

National Secondary Drinking Water Regulations (secondary standards) are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply. Going above and beyond the federal requirements, Kunsan Air Base is planning a major project to improve water quality for its customers. The base water treatment plant will undergo a major renovation, as components of the treatment process will be upgraded to provide both higher treatment capacity and better customer satisfaction.

For United States installations overseas, the host nation and American governments agree on a set of environmental standards to be followed. In the case of Korea, the 2004 Korean Environmental Governing Standards (KEGS) regulate the testing, quality, and quantity of contaminants that are allowed in the water system.
Note: The drinking water contaminant levels in the KEGS are the same as U.S. EPA standards.
To obtain a copy of the KEGS or if you have any questions about this report or concerning your water utility, please contact the 8th MDOS Bioenvironmental Engineering Flight at 782-4670 or Civil Engineering Customer Service at 782-5313.

Kunsan Air Base routinely monitors for constituents in your drinking water according to the KEGS. The table below shows 1 Jan – 31 Dec 2008 monitoring period results. This table will use many terms and abbreviations you might not be familiar with. To help you understand these terms we've provided the following definitions:

Parts per million (ppm) or milligrams per liter (mg/l) - One part per million corresponds to one minute in two years or a single penny in $10,000.
Parts per billion (ppb) or micrograms per liter - One part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.
Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Maximum Contaminant Level - The "Maximum Allowed" (MCL) is the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
Maximum Contaminant Level Goal - The "Goal" (MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
Nephelometric Turbidity Unit (NTU) - Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

TEST RESULTS

MICROBIOLOGICAL CONTAMINANTS

Contaminant	Violation Y/N	Level Detected	Unit of Measurement	MCLG	MCL	Major Sources in Drinking Water
Total Coliform Bacteria	N	0 present in 108 samples	Present	0	presence of coliform bacteria in 5% of monthly samples	Naturally present in the environment
Turbidity	N	Highest yearly sample result: 1.15 Though the highest sample was 1.15, more that 5% of the samples were not over the maximum allowable limit	NTU	NA	Greater than 1 NTU in over 5% of the samples	Soil runoff

♦ Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

INORGANIC CONTAMINANTS

Contaminant	Violation Y/N	Level Detected	Unit of Measurement	MCLG	MCL	Major Sources in Drinking Water
Asbestos (2002) (Required to be sampled once every 9 years)	N	Less than 0.188	mf/L (Million Fibers per Liter)	N/A	7	Decay of asbestos cement water mains; erosion of natural deposits
Barium	N	0.0125	mg/l	N/A	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Mercury	N	ND	ppm	N/A	0.002	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits

VOLATILE ORGANIC CONTAMINANTS

Contaminant	Violation Y/N	Level Detected	Unit of Measurement	MCLG	MCL	Major Sources in Drinking Water
Total HAA5 [Haloacetic Acid]	N	16.5	ug/l	N/A	60	By-products of drinking water chlorination
TTHM [Total trihalomethanes]	N	25.3	ug/l	N/A	80	By-products of drinking water chlorination

SYNTHETIC ORGANIC CONTAMINANTS

Contaminant	Violation Y/N	Level Detected	Unit of Measurement	MCLG	MCL	Major Sources in Drinking Water
Di(2-ethylhethyl) phthalate	N	ND	mg/l	.0006	0.006	Discharge from rubber and chemical factories

LEAD AND COPPER TAP MONITORING

Contaminant	Number of Sites over Action Level	90th Percentile Result	95th Percentile Result	Unit of Measurement	Action Level	Major Sources in Drinking Water
Lead (2008)	0	0.0016	.001	ppb	15	Corrosion from household plumbing systems; erosion of natural deposits.
Copper (2008)	0	0.486	0.104	ppb	1.3	Corrosion from household plumbing systems; erosion of natural deposits. Leaching from wood preservatives.

♦ The criterion for water systems under the lead and copper rule is that the 90th percentiles not exceed the action level. Because we met the criteria for three consecutive years between 1998-2000, Kunsan Air Base is on a reduced monitoring schedule and required to sample once every three years for lead and copper at the customers' taps. Kunsan Air Base was monitored in 2008.
♦ The 90th percentile reflects the concentration of lead or copper at which 90% of the samples tested were found to have not exceeded. Lead and copper results above are from the most recent monitoring period (2008).
♦ Lead and copper samples represent "worst case" results, in that the tap water is deliberately left in the pipes for several hours before sampling. Running the water for a short period effectively flushes the plumbing, further reducing the copper and lead levels.
♦ Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.